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NATURAL SCIENCES IN THE HIGHER SCHOOLS OF GERMANY

II.

THE first installment of this essay was devoted chiefly to the teaching of natural history in the first six years of the secondary schools. Inasmuch as the age of the pupils in *Sexta* is between nine and ten years, the greater part of the course would correspond to the upper primary and grammar school course in American schools. The work in physics and chemistry in the German schools corresponds more nearly to our high school standards.

The following outline of the course in physics and chemistry is from the programme of the *Königstädtisches Realgymnasium*, Berlin, 1895–6:

UNTERSECUNDA: *Physics*, 3 hours. First semester: Frictional electricity, and phenomena out of the domain of magnetism and galvanic electricity. Acoustics and optics. Second semester: Mechanics of solid, liquid, and gaseous bodies. General properties of matter. Parallelogram of forces and of motion. Laws of falling and vertically projected bodies. The simple machines. —— Text-book, Jochmann, *Grundriss der Experimental Physik*.

OBERSECUNDA: *Physics*, 3 hours. First semester: Magnetism and galvanic electricty. Second semester: Heat. Repetition and extension of mechanics, especially of oblique projection and of central motion. —— Text-book, same as in *Untersecunda*.

OBERSECUNDA: *Chemistry*, 2 hours. First semester: Discussion of the elements hydrogen, oxygen, nitrogen, chlorine, bromine, iodine, fluorine, in connection with experiments suitably selected. Foundation of the conception of element, compound, base, acid, and salt. The law of Marriotte and Gay-

Lussac [the gas law, PV=RT], the law of combination by weight and by volume [law of Gay-Lussac], the hypothesis of Avogardo, the molecule, the atom, valance. The regular [isometric] system (magnetite, rocksalt, fluorspar), the quadratic [tetragonal] system (cassiterite). Angle measurement with the goniometer, the solution of stoichiometrical problems. Second semester: Discussion of the elements sulphur, phosphorus, arsenic, boron, carbon, and silicon with experiments. Extension of the crystallographic idea. The orthorhombic and monoclinic systems (sulphur). Dimorphism, allotropism; the rhombohedral system (calcite, quartz). Angle measurement with the goniometer. Solution of stoichiometrical problems.

UNTERPRIMA: *Physics*, 3 hours. First semester: Wave theory, acoustics, and optics. Second semester: Mechanics. In both semesters, reviews and more thorough mathematical treatment of particular parts of the earlier work. Solution of problems. —— Text-book, same as in *Untersecunda*. (Physical laboratory exercises, 2 hours, optional.)

UNTERPRIMA: *Chemistry*, 2 hours. First semester: Discussion of the elements potassium, sodium, calcium, barium, strontium, and magnesium, with experiments. Vapor density. Volumetric analysis. Extension of the crystalographic idea (hemihedrism, twinning, isomorphism, pseudomorphism. The physical appearance of crystals). Manufacture of gunpowder, production of salt, soda, chalk, and gypsum. Angle measurement with the reflection goniometer. Solution of stroichiometrical problems. Second semester: Discussion of the elements of zinc, lead, iron, copper, manganese, cobalt, nickel, chromium. The law of Dulong and Petit. Extension of the crystallographic idea. The monoclinic system (green vitriol). The triclinic system (blue vitriol). Metallurgy of ores of lead, zinc, iron, and copper. Solution of stoichiometrical problems. Technological excursions. Work in the chemical laboratory. Illustration of preparations. Qualitative analysis by the "wet" method. Blowpipe analysis ("dry" method). Physical experiments important for chemistry.

OBERPRIMA: *Physics*, 3 hours. First semester: Optics. Second semester: Mechanics. In both semesters, reviews and more thorough discussion of parts of the earlier work, especially quantitative determinations and methods of measurement.——Text-book, same as above. (Physical laboratory exercises, 2 hours, optional.)

OBERPRIMA: *Chemistry*, 2 hours. First semester: Discussion of the elements tin, aluminum, antimony, bismuth, mercury, silver, gold, platinum, with experiments. Manufacture of alum. Periodicity of the elements. Solution of stoichiometrical problems. Work in the chemical laboratory. Illustration of preparations. Some quantitative determinations. Volumetric analysis. Second semester: Introduction to organic chemistry. Elementary ("ultimate") analysis. Acids, alcohols, aromatic substances, carbohydrates,

fermentation, albuminates, organic synthesis. Chemical theories. Manufacture of paper, starch, and sugar. General view of the natural processes of the organic world (germination, food assimilation, respiration, decomposition, putrefaction). Solution of stoichiometrical problems. Technological excursions. (Work in the chemical laboratory. Illustrations of organic preparations; determination of sugar by chemical and optical methods, 2 hours, optional.)

This outline leaves little to be said on the subject-matter of instruction in physics and chemistry. The aim in the teaching of physics, as in natural history, is not so much acquaintance with a large number of facts as the cultivation of the pupil's ability to make accurate observations and the development of his logical powers, chiefly with reference to the causal relations existing between particular natural phenomena. In this respect the *Real*-schools can show better results than the *Gymnasien*. But in all schools the government emphasizes the need of scientific observation confirmed and strengthened by a certain amount of formal practice.

According to the Prussian syllabus of 1892 the course in physics is divided into two parts. The first part is intended to give the pupil some notion of the fundamental principles of the subject as exemplified in the ordinary and more familiar manifestations of nature; it is concluded with *Untersecunda*. The continuation of the course aims to give those who may pass on to the university a more comprehensive understanding of physical laws and their applications. This division is in strict accord with a prevailing idea of the Berlin Congress, that those leaving school at sixteen should have as symmetrical training as is possible to provide. Only the most important principles are taught in the first part of the course, and much stress is put upon the application of these to the practical affairs of everyday life.[1]

The advanced course is first of all a repetition and extension of the earlier work, and in the second place a more extended mathematical treatment of the subject. This latter phase of the work can be done successfully only in the *Real*-schools, inas-

[1] Full information of what may be accomplished in this preliminary course may be found in the *Zeitschrift für den physikalischen und chemischen Unterricht, Jahrgang V*, Heft 4 (April, 1892).

much as the mathematics taught in most *Gymnasien* is insufficient for the purpose. The *Realgymnasium* of Weimar, for example, provides a special course in mathematics during the last two years devoted exclusively to mechanics. Particular attention is given to mathematical geography and the elements of astronomy.

It is only in the *Oberrealschulen* that a special course in chemistry is given in *Untersecunda*. Other schools are requested to present a few important chemical facts in connection with the study of galvanic electricity. At best but little can be done. Organic chemistry and its applications are practically untouched in all schools; any consideration whatever of the subject must be purely incidental, and confined to those processes of greatest practical importance.

Stoichiometry is the one branch of chemistry which is thoroughly taught, and it is the mathematical treatment of this branch which receives most attention. Mineralogy is a side issue; so far as I have observed, it amounts to little more than a formal study of crystallography.

A text-book is always employed in teaching physics and chemistry precisely in the same manner as in teaching natural history. But unlike the methods commonly found in American and English schools, German teachers invariably use these books for reference only. It is not expected, however, that they will take the place of the elaborate compendiums found in each schoolroom; they are mere outlines of the subject intended to assist the pupil in making scientific classifications, not for purposes of recitation. In fact, as we have repeatedly observed, the German teacher never assigns a lesson in advance to be studied out at home. Recitations, therefore, at least in the American sense, are unknown.

A typical lesson always includes a review of the principles and experiments of past lessons which have a direct bearing upon what is next to be presented. The teacher explains the nature of the apparatus with which he is to deal, and places it upon his desk in full view of the entire class. (It may be observed in passing that schoolhouses of recent construction have a lecture

room for the classes in physics and chemistry in which the seats are elevated, generally in a semicircle about the teacher's desk.) Certain conditions are stated and the class questioned as to what results may reasonably be expected. This preliminary discussion having carefully prepared the way for a right understanding of the experiment, the demonstration by the teacher follows. The students are required to make note of the apparatus used, the principles involved, the conditions under which the reaction occurred, and the results obtained. By means of a running fire of questions the teacher keeps himself informed in regard to the mental state of his class, for it is his duty to see not only that all understand the trend of the experiment, but also that its significance is realized.

German practice is always consistent in its adherence to the idea that good teaching never leaves the pupil in doubt. In mathematics he is not assigned a problem to wrestle with by himself alone; in the early days of his language study all of the translations are made in class; and even in natural history we have seen how he is guided, step by step, first in making his observations and then in describing what he has discovered.

We observe the same facts in the prevailing methods of teaching physics and chemistry. Every principle worth demonstrating is illustrated in class. But the teacher does more than demonstrate; he *teaches* as well. And successful teaching requires that present impressions be definitely related to past experiences. Wrong relationships, or none at all, are an inevitable consequence of misapprehension. For this reason the German teacher counts it his duty to prevent his students drawing wrong inferences. They have not yet arrived at the stage of independent study; that comes in the university. In the secondary schools no time should be wasted in beating about the bush. The ability to make an occasional lucky guess is in no wise identical with sustained logical thought.

At the conclusion of a lesson topic the pupil is directed to consult his text-book and afterwards write up his notes. This done the teacher inspects the books at his leisure.

Laboratory exercises, if required at all, are introduced at this point in order that students may themselves duplicate the experiment performed by the teacher, or make other demonstrations putting to practical test the knowledge just acquired. The function of laboratory practice, as will be seen, is to make application of facts already learned, not at all for the purpose of presenting new truths or arriving at new deductions. Inasmuch as laboratory practice is optional, and the exigencies of the time card usually place it out of school hours, few students enter for it. No harm is done, however, if only a part of the class avail themselves of the opportunity. They learn something thereby, to be sure, but their previous knowledge is intensified rather than extended. In other words the certainty of promotion is not jeopardized by failure to elect the laboratory course.

Probably the best adducible evidence of the relative value of the various studies, as popularly estimated, is the part each plays in the final examination. Judged in this way the sciences take low rank. Physics may be counted as a fourth part of mathematics in the gymnasial examination; in the *Real*-schools one problem is assigned in physics and one in chemistry.[1]

The worst of it is that "nothing short of a miracle," to quote a German teacher, "can prevent the promotion of the most deficient member of the class provided his attainments be satisfactory in other subjects."

[1] The problems in science assigned at the *Abiturientenprüfung* in the *Königstadtisches Realgymnasium*, Berlin, were as follows:

Physics, Michaelmas, 1895. "To determine the internal resistance of a Bunsen battery cell the following experiments are made:

a) In one arm of a Wheatstone's bridge a resistance of one ohm is inserted; in the other arm, a rheostat. The galvanometer needle shows no deviation when the rheostat resistance, $r_1 = 4.5$ turns of the wire.

b) There is now introduced into one arm of the bridge a copper wire whose length, $l = 9.8$ meters; and whose thickness, $d = 1$ millimeter; and again in the other arm, the rheostat. The galvanometer needle now shows no deviation when the rheostat resistance, $r_2 = 0.84$ turns of the wire.

c) Through the same copper wire and through a tangent galvanometer (joined in series) a current is led by means of the Bunsen cell under investigation. The needle of the tangent-galvanometer now shows a deviation, $\alpha_1 = 17^\circ\ 30'$.

d) A second and like Bunsen cell is now introduced into the circuit in series with the first. The needle now shows a deviation, $\alpha_2 = 25^\circ$.

How great according to these experiments, is the internal resistance of a Bunsen cell?

In conclusion it need hardly be said that the teaching of science in the German secondary schools is intended primarily to provide formal discipline of the powers of observation, of logical thought and accurate description. Evidence is not wanting to show that the sciences are not taught as distinct subjects, but as a means of assisting the individual to a more complete realization of his environment. Pedagogic writers emphasize repeatedly the futility of attempting to give the preparatory student a thorough knowledge of the principles even of a single science; this is the work of the university. The aim of the secondary schools should be to provide such training as will enable the student when he enters upon his university career to begin the study of any science intelligently. In other words, an understanding of the relations existing between sciences is of more worth than an extensive knowledge of any one. Therefore, the principles of biology and of physics properly taught are the sole requisite for entrance upon university work. The physical conditions under which life develops are an important accessory to the study of biology, and the principles of chemistry supplement advantageously the teachings of physics.

The presence of laboratories well equipped for individual work and supported by annual appropriations in most German schools, shows that the present method of science teaching is a reaction against earlier notions concerning the function of laboratory practice. So long as the aim was to teach the sciences *per se*, laboratory work was necessary for each individual, but with the advent of the idea that the sciences are no more to be considered independent studies than other subjects of the curriculum, and that mental development of the pupil is of more consequence than definite information in any one subject, class

Further, how great, according to the experimental results obtained, is the specific resistance of copper?

The above experiments — especially the arrangement and mode of operation of the Wheatstone's bridge — are to be described and explained by means of a simple diagrammatic figure.

Chemistry, Easter, 1896. "The description of the most important chemical and crystallographic properties of silicic acid, and the explanation of its importance in the plant and animal kingdoms with some examples."

instruction at once comes into the foreground. Laboratory work is still counted an exercise of great value, but its aim is to facilitate application rather than to promote individual investigation. The right use of the inductive method by no means shifts the responsibility from the teacher to the pupil. The teacher must do even more teaching; in fact the pupil can be more safely trusted to work independently along deductive lines than inductive. But as I have repeatedly cautioned the reader not to confound class instruction with the hearing of a recitation, no one will identify the German method of teaching science with certain practices well-nigh universal in America.

We may criticise the methods of the German teacher how we will; we may disapprove of his selection of subject-matter, his apparatus, laboratory and text-book; and especially we may refuse to recognize the legitimacy of his aim and the worth of his ideals; and yet when all is said the German teacher has some convincing arguments in store. He can point triumphantly to a long line of German scientists, once his pupils. He will tell us that all students entering the university are familiar with at least the elements of physical and biological science, that this work has been an integral part of their school training for nine years; that the classical students are broadened by contact with the *real* studies, and that the scientific men are more liberal for having included the humanities in their education. The clinching argument, however—an argument convincing at least to the commercial world—is that the marvelous industrial progress of Germany in the last quarter century is due ultimately to the superior skill and wisdom of the German scientists. England today—witness the recent action of the government in promoting the teaching of science and the resolutions of learned societies and trade unions—is assured that the preservation of her supremacy in the markets of the world is largely dependent on her ability to train up such scientists as now direct the development of the industrial arts in Germany.

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THE TENDENCY OF STUDENTS TO OMIT THE COLLEGE COURSE THAT THEY MAY ENTER PROFESSIONAL SCHOOLS DIRECT FROM THE SECONDARY SCHOOLS

THIS subject is one that demands drastic treatment. The disease admits of a simple diagnosis. It is a contagious malady, answers to the germ theory, and while its infection knows no limits, it abounds especially in large cities, where men most do congregate, where the golden calf is worshiped, and conscience becomes but the negative exponent of a minus quantity. Its therapeutics, however, have defied the skill of all who have hitherto attempted to stay its ravages, which have been no respecter of persons. Its victims are found alike in the bedchamber of the sick, who languish and die through the treatment of unskilled attendants; at the bar where is but the mockery of justice, and where men become entangled in the meshes of the law from which they extricate themselves only by the surrender of their property; in the pew, which looks to the pulpit for the pure milk of the Word, and witnesses but the polluted liquefaction of some gaseous vapor. They ask for fish and receive serpents, for bread, and receive stones, and then people wonder why the Sunday newspaper is so popular, and religion is at so low an ebb; and most sadly of all, perhaps, the victims of this fell and foul disease are found in astonishing numbers among the fifteen millions of children in our country who, for lack of instruction which is pedagogical, and instructors who are philosophical, either fall out by the way, discouraged with their ineffective treatment, *or are kept on a diluted diet two or three years longer than either nature or reason demands.*

Professional schools, within the scope of my theme, I classify as those of theology, law, medicine, and normal schools. Their membership should consist, first, of those who are by the

endowments of nature specifically fitted for the calling to which they propose to consecrate their lives, and, secondly, of those who have strengthened and supplemented the gifts of nature by the very highest general, and most extensive special education which the best institutions in the land now afford. These people are by law (what crimes are committed in the name of a diploma!), and ought to be by acquirements, the conservators of the public health and the public morals, the dispensers of digestible spiritual food and the trainers by psychic methods of all the youth of the nation; to them are committed trusts which bank vaults cannot measure, and for the failure to guard which nothing can atone.

The pulpit, where polish of manner, grace of utterance, culture of mind, piety of spirit should abound, and which in the absence of any one of these qualities so far falls short of its divine mission, is today of diminishing value as an agency in the world's evangelization. I do not mean to say that clergymen are less cultured and less educated than formerly, but that their education and culture have not kept pace with the spread of general intelligence, with the ability of the people to read and reason, and with their skill in piercing the vulnerable shields, and shattering the shallow arguments which come as messages from the Infinite. In every church, urban and rural, there sit enthroned in the pews more talent, logic, pathos, and power than emanate from the pulpit. You say there may be lack of profound education in the other professions but not in the ministry. Surely our churches, and the people who sustain them, and are spiritually sustained by them, demand an educated ministry. This cause, the right attitude of man toward his Creator, the preparation of the soul for immortality, must have for its advocates in this materialistic and semi-skeptical age, men whose minds as well as hearts have been enriched with the results of the closest study and the deepest research. I thought indeed that a careful examination of recent statistics covering our theological institutions, which are responsible for the character and caliber of those who are sent out to preach the gospel,

would show that at least 75 per cent. of the students were college educated, who had received a degree in letters or science from some institution, however humble, authorized to bestow the same. I was much too sanguine, and my blood chilled to find my calculations so far in error. In the last report of the United States Commissioner of Education, which brings the statistics down to as late as 1894, we find the following:

The circular sent out by the bureau asked, "How many students have degrees in letters or science?" One hundred and four of the 147 theological institutions answered this question. In these schools there were 4699 students, of whom 2185, or less than 47 per cent., had a degree. It is a noticeable fact that in the 43 of the 147 schools which did not answer this question there were 2957 students, or nearly one-third of the entire enrollment, in the 147 schools. It is also significant that of the 2185 who had degrees, 1971, or all but 214, were in the divinity schools of the North Atlantic and North Central states, and while there were 200 more students in the schools of the North Central states, there were 500 less having degrees. This clearly shows that in the states of Maine, Massachusetts, Connecticut, New York, New Jersey, and Pennsylvania there is a much larger ratio of college graduates among candidates for the ministry than in any other section of the country. A careful study of all these statistics, noting the denomination, distribution, and general standing of these schools, compels the conviction that among those who expect to win their way to heaven and upon earth by such an exposition of the Scriptures and such powers of persuasion as will regenerate the people and bring them into harmony with the divine, less than 40 per cent. have the antecedent preparation of an ordinary college education.

The story of the colored brother is not out of place. He appeared before the conference of ministers for the laying on of hands, and, in answer to the demand that he should present some proof of his divine call, said that night after night near the full of the moon there had appeared to him spanning the sky in a blaze of light these cabalistic letters, G. P. C.—*Go*

preach Christ. At this juncture a brother in the congregation, wise in his generation, interrupted the proceedings by crying out: "You are mistaken, those letters mean *Go plough corn.*" You can make the application. If the misfits in theology, law, medicine, and the teaching profession were to *go plough corn*, the desert might blossom as the rose, and there would certainly be fewer deaths, less suicides, more contentment, a broader culture, and a deeper sense of piety in the world.

If we turn from the schools of theology to those of law, we find a still more deplorable condition of statistics. Every learned profession calls for the rarest gifts and the ripest training. Students of law or practitioners at the bar cannot be too thoroughly equipped. The sharpest mental acumen, the greatest accumulation of knowledge, the deepest insight into the subtleties of human nature, the closest powers of analysis, the most astute judgment, the choicest vocabulary, the mastery of expression, are all needed by him who would convince judges, sway juries, ravel the mysteries and enforce the righteousness of his cause. An attorney-at-law, in the highest sense of the word, should be an artist and a scientist, an orator and a logician, a philosopher and a psychologist. What are the facts? In the *sixty-seven* law schools of the country representing thirty-one states, there were in attendance in 1894 7311 students, of whom *less than 20 per cent.* had received any degree in letters or science. Eighty per cent., or four-fifths of those who expect to be the conservators of justice in this country, are studying law with no previous equipment but that of a common-school or possibly a high-school education. Of the 7311 students for 1893–4, 34 per cent. graduated. This large per cent. is the result of the shortness of the course. Of the sixty-seven law schools, thirteen only have a three years' course, forty-seven a two years' course, and seven a course of but one year, and when we remember that a year consists of but six to nine months, what a travesty upon education do these schools become! In attending a law commencement in our city a year ago, one of our prominent judges sitting near me remarked as the proces-

sion of immature youths in cap and gown passed by: "Of the 4000 lawyers in Chicago the bulk of the work is done by 400, and of these 400, 300 had probably received a college education previous to the study of the law."

Few restrictions are placed upon the practice of law. The constitution of Indiana expressly states that any man may practice law who is a voter and of good moral character, and the stress laid upon the latter qualification has as yet never been discernible.

I sent the following circular recently to 150 professional schools:

MY DEAR SIR:—Will you extend to me the courtesy of sending me as full information as is consistent with your duties, concerning the following points:

(1) What are the *minimum* requirements for admission to your institution? (State whether common-school, high-school, or college diploma, or equivalent education of any one of these, or by examination covering what subjects and to what extent.)

(2) Have you maximum requirements? If so, what?

(3) Do students entering with high-school diploma and those with college diploma enter same classes, under same conditions for same work?

(4) How many years in your course of how many months each?

(5) To what extent is your course the lecture system, and to what extent the text-book and laboratory system?

(6) What per cent. of your students are college graduates? What per cent. high-school graduates only? What per cent. common-school graduates only? What per cent. of instructors are college graduates?

(7) What is your opinion concerning the education which ought to be secured before entering your institution in preparation for a professional career?

Yours truly,

A. F. Nightingale,
Superintendent of High Schools.

Replies, in many instances of exceeding great interest, have been received from most of these institutions, but too late to be thoroughly classified for this paper.

The Dean of the College of Law of the University of Pennsylvania says:

"My opinion is that the student should have a college education. If he has no special leaning toward the sciences or languages, I think he should take the courses in college which deal with history and political science. He should know at least one language thoroughly. It is better that this language should be Latin; if not, German. Except under peculiar circumstances I think it is unwise for a young man to undertake the study of law at the present time, if he expects to make his living at the bar, without the preparation which comes from a college training."

And yet in this very institution 43 per cent. of the students today have a common-school education only.

Permit me to quote from other jurists of high standing on this subject: "Hundreds of young men are being admitted to the bar in the various states, many of whom can never become properly qualified on account of lack of elementary education." Again, "This condition of affairs [viz., the clogging of the courts with a mass of cases] exists either because the practitioners of law are inefficient, because they are of such base caliber that they willingly degrade the profession by a wilful obstruction or perversion of justice, or because of a combination of these causes." "Litigation is now properly considered an evil. The people are losing faith in the ability of their courts to arbitrate the difference of litigants accurately, speedily, and inexpensively." "Law students can obtain admission to the practice of their profession in a shorter time than can students in any other calling. Not only is a longer course of study required in other classes than in law schools, but the percentage of students graduating is less than in law schools. Moreover, while the course in law schools is shorter than in any of the others, a large number of law students do not take even that, but depend entirely upon private study and information acquired in a lawyer's office." "So long as students can secure admission to the bar through the inferior courts, after only a few months of study, and with little regard to the legal knowledge obtained, it will be impossible for law schools to require full courses of study."

Our law schools are greatly at variance in regard to methods used. In thirty-three the instruction is mainly by lectures; in twenty-four mainly by recitations from text-books; in three the main reliance is placed upon the discussion and explanation of leading cases. In the remainder there is a union of the two or three methods, a kind of eclectic system.

The most deplorable fact of all is that the students, whether graduates of a common school, a high school, or equipped with a college education and a degree, receive their instruction in the same classes, recite from the same texts, and are subject to the same quizzes. As well may we attempt to teach geometry or physics or Greek to pupils of the fourth grade and the eighth grade and the tenth grade at the same time, in the same classes, and in the same way, looking for the same results. The whole plan of preparing men to defend righteousness and secure justice borders on the farcical, and becomes a fit subject of ridicule for transatlantic scholars.

When we turn from the law to medicine we simply pass from the thicket into the jungle. Among the 22,000 students in the 152 medical schools of the country in 1893–4 it was impossible for the Commissioner of Education from the confusing data received to make any satisfactory estimate of the number of college-educated men. It is quite safe to say, however, that not more than 10 per cent. had received degrees. This is appalling when we consider the value of human life and the consequent necessity of the deepest scientific knowledge to counteract the effect of disease upon the system.

Nearly 8000 new doctors graduate every year from our medical schools, and the ratio of these students to our population is twice what it is in European countries. No wonder the *Pacific Medical Journal* says: "It is becoming constantly harder for a young medical man to get a foothold. What he lacks in college training he makes up by long waiting after he gets his degree."

Notwithstanding the standard for entrance and graduation has been vastly raised by the medical schools the last ten years,

and they deserve great credit for this advance, nevertheless the numbers in actual attendance have not been diminished. It is said that the common schools and the high schools are educating large numbers of young men who have aspirations for the higher callings, but how much nobler would be those aspirations, were these young men to realize that the profession was crowded, and that real success lay along the path of a broader education as a basis for medical study.

Our medical schools are now filled with students who flock to them from the factory and the farm, and the few of college training, whose mental grasp is quick and keen, must sit side by side with those who often have less than a common-school education and listen to the same lectures, attend the same clinics, and answer the same quizzes. These conditions cannot long continue. Changes for the better are going on, but they are all too slow. Radical measures should be taken to relieve all our professional schools from the seemingly low motives which now call them into existence and sustain them, and which degrade the very name of professional, and place them where they belong, the supplements of a college education, so that those who follow the career of theology, law, or medicine may truthfully be said to belong to the learned professions.

The limit of this paper will not permit a discussion of the normal-school question; a question which, in its relations to the sum total of human contentment and human success, looks all others out of countenance. It is the greatest educational question of the age. A preacher may be pious but illy fitted for the pulpit,—a lawyer may be both unlearned and unscrupulous,—a doctor may be unskilled and unscientific, but these men deal largely with adults who can think and reason for themselves, and make their own selection of doctors, spiritual, legal, medical.

The fifteen or twenty million of children in this country, however, are as clay in the hands of the potter to the school-teacher, who is so large a factor in their mental and moral training. Here, neither the children nor their parents have any

choice, and the child becomes the pliant tool of the teacher to be dulled or sharpened according to her wit and wisdom or her frivolity and folly.

Whence come these teachers who are to be responsible for the citizenship of the next generation? In the grammar and primary schools, among the rank and file, not 1 per cent. have a degree in letters or science. Vast numbers are without even a high-school training, and those who are graduates of a high school, and have a year of normal instruction, are scarcely more than twenty years of age, and while they may pay tithe of "mint and anise and cummin" they are not fitted to be the molders of mind, a work which, in its highest excellence, can be done by those only who are both skilled by nature—God-endowed—and by the academic training of the best institutions of learning.

What are the facts? Even though the normal schools, public and private, as at present conducted, *are* the schools par excellence for the preparation of teachers, how few they supply. There were 14 million children in the common schools of the country in 1894, and they were taught or taken care of by 388,000 teachers. It is fair to suppose that 20 per cent. of these teachers, or 77,600, are new each year.

In the 160 public normal schools in 1894 there were 37,899 students, of whom 5952, or 16 per cent., graduated. At the 238 private normal schools which have no public supervision and are conducted largely as commercial institutions, a pure business enterprise, there were 27,995 attendants, of whom 2291, or 8 per cent., graduated, and it may be of interest to note, by way of advertisement, that of these 2291 graduates from 238 private schools, 578, or more than 25 per cent., were from a single school. Therefore, in 1894, ·8243 graduated from the 398 normal schools of the country. There were, in addition to the 66,000 students in the normal schools *per se*, in 1894, 55,000 in the pedagogical courses of 173 colleges, 5000 in the so-called training course of 153 public high schools, and 4300 in a similar course of 137 private high schools. From all the

schools representing 861 distinct institutions, which profess to have a normal department or teachers' training course, there were no more than 10,000 graduates in 1894, or less than 13 per cent. of the actual number required each year to replenish the ranks and supply the natural increase of teachers.

Making due allowance for the fact that figures will lie, we nevertheless are forced to the conclusion that a very large per cent. of those who are engaged for the first time each year to teach our children in their earliest development at school have neither a college education, normal instruction, nor a high-school diploma.

As we hasten to a conclusion let us pause to inquire what are the causes of this unhappy condition of scholastic affairs regarding professional training.

We attribute these causes, first, to that spirit of haste, which makes waste, on the part of our young people whose semi-education, always a dangerous possession, allures them into the path of professional study.

They know too much to be day-laborers or clerks behind the counter. The hill of success in business vocations is too steep for them to climb. Entrance to a professional school is so easy, the course so short and pleasant, and a diploma and a degree so cheap, that they join the class of those who rush in where angels fear to tread.

Secondly, because the professional schools themselves seem to be established purely as a business enterprise, not from educational motives, not for the purpose of turning out learned men, men of genius and power, but rather that the managers may glorify themselves, and make to themselves a name and a fame among men, not to speak of the fee which each student contributes. These schools, especially of law and medicine and dentistry and pharmacy, vie with each other as to the number of diplomas they can sell.

They throw wide open their doors, and tempt callow youth, immature and unrefined, to leave the hammer on the anvil and the plough in the furrow, to become pettifogging lawyers and self-

conceited doctors. Surely so many schools and so many students are not needed. This country is suffering today from a surfeit of poor preachers, poor lawyers, poor doctors and poor teachers. If it should become a rule tomorrow that no student could hereafter enter a law school without the equipment of a college education, we should have fewer attorneys, but less litigation and more peace and good will among men.

If the same were true of schools of theology, there would be a diminution of starving preachers, but much less skepticism and more piety in the world.

If candidates for a medical degree were compelled to first obtain an academic degree, there would be less doctors and fewer funerals.

George Howland once said to the writer, "It is surprising what progress pupils will make in spite of the teacher, and it is equally astonishing how many people recover from disease in spite of the doctors."

As was said by a recent distinguished candidate for the presidency, what we need is agitation.

It is the duty of this great University to take an exalted position in this question. It is the duty of every college, of all educators and all citizens who do not believe in the principles of mere empiricism and charlatanism, to sound the note that shall cry a halt to the unprofessional conduct of our professional schools.

A. F. NIGHTINGALE

CHICAGO

THE HISTORY OF SECONDARY EDUCATION IN THE UNITED STATES. I.

BIBLIOGRAPHY.

Copyright, 1897, by ELMER E. BROWN.

[At different stages in the preparation of this bibliography, I have been assisted by these students in Pedagogy in the University of California: Albert W. Gunnison, A. M.; Miss Vida Redington, B.S.; Miss Fanny D. Ball, A.B.; and by Miss Kate M. Wertz, Ph.B., Fellow in Pedagogy for the year 1893–4. I shall be much indebted to anyone who will call my attention to publications which should have a place in such a list and have been omitted in this. For some portions of the country I have thus far been unable to secure any account whatever of the beginnings and the progress of secondary education. In view of the fullness and the literary excellence which characterize the accessible accounts of secondary schools in some portions of New England, I am constrained to echo the saying of President Draper: What other states need "is the help of Massachusetts men to tell the story."—E. E. B.

The following abbreviations are employed:

Am. Ed. Hist. for Contributions to American Educational History, edited by Herbert B. Adams.

Am. Inst. Instr. for The Papers Read before the American Institute of Instruction, with the Journal of Proceedings.

Am. Journ. Ed. for [Barnard's] the American Journal of Education.

Circ. Inf. for Circular of Information of the United States Bureau of Education.

N. A. Rev. for the North American Review.

Proc. N. E. A. for the Journal of Proceedings and Addresses of the National Educational Association.

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(To be concluded in March)

THE MICHIGAN SCHOOLMASTERS' CLUB—PROCEEDINGS OF THE TWENTY-SEVENTH SEMI-ANNUAL MEETING

THE twenty-seventh semi-annual meeting of the Michigan Schoolmasters' Club was held at Ann Arbor Friday and Saturday, November 27 and 28, 1896. In conjunction with the meeting of the club was held the third annual conference of Teachers of English of the North Central States. The sessions Friday morning, afternoon, and evening were devoted to the English teachers, and those Saturday to the Schoolmasters' Club.

The first paper was read Friday morning by Miss Gertrude Buck, Assistant in English in the University of Michigan, on "The Psychology of the Sentence Diagram." The following is a synopsis of this paper.

The justification of the sentence-diagram rests usually upon one of two arguments. Either it is alleged (1) that the diagram is an X-ray photograph of the sentence, an accurate representation of the sentence's actual structure, or (2) that while the diagram does not in any real sense make visible the inner anatomy of the sentence, it does serve as a convenient device for exhibiting visually the parts of speech contained in the sentence and their formal relations to each other.

It can readily be shown that the ordinary straight-line, Reed-and-Kellogg diagram as we now have it does not represent the actual anatomy of the sentence. This diagram implies that a sentence is built by tacking first a predicate to a subject, and then their several modifiers to each of these main parts; whereas the genesis of the sentence is psychologically from a single undifferentiated word, like the interjection, out of which successively develop subject, predicate and their various modifiers. In other words, the sentence grows like a plant, is not manufactured like a rocking-horse.

And, therefore, the straight-line diagram, which represents the sentence as a manufacture, is untrue to the essential nature of the sentence and cannot be defended upon the first ground mentioned. The second ground is equally untenable, because when it is once granted that the straight-line diagram rather misrepresents than photographs the real structure of the sentence, the conscientious teacher will shrink from using a device, however

temptingly "convenient," which is certain to induce a false conception on the part of his pupils.

It is not denied that some diagram is useful in the teaching of grammar. The old straight-line diagram is, however, misleading to the pupil, as inducing falsely artificial conceptions of sentence-structure, and should be discarded in favor of some diagram which truly represents according to our best present knowledge the actual psychological framework of the sentence.

In the discussion which followed, the diagram was alternately attacked and defended. Professor I. N. Demmon, of the University of Michigan, spoke as follows:

I wish to say a few words in hearty appreciation of this paper, not so much on account of the conclusions reached in it as for its admirable manner and its suggestiveness. As teachers, what we need perhaps more than anything else is to be saved from the bondage to formulæ. In these days of increasing professionalism, with our normal schools, our institutes, our superintendencies, our flood of books and papers on methods of teaching this and that and the other subject, I sometimes fear that the teaching class is in danger of becoming enslaved by King Method. I wonder if the time has not already arrived when we should consider the *how* less and the *what* and the *why* more? It is because the paper sets us thinking along these lines that I consider it peculiarly timely.

We have been reminded that a device for grammatical analysis, now widely used in our schools, involves a false conception of the nature of the sentence; that the sentence is not a machine, like a watch for instance, to be taken to pieces and put together again in order to learn its structure; but that it is a growth following a general law, it may be, yet with infinite variations due to a great variety of causes. When we talk or write naturally we do not *make* sentences. Then why should we in school? The use of diagrams leaves on the mind of the learner, almost inevitably, the impression that the sentence follows some exact and ascertainable law; or that, if it does not, it ought to and must be made to. This mechanical view of language, so often fostered by grammatical teaching, is the source of much evil, and I object to the diagram because it accentuates the false impression. The elaborate systems of diagramming set down in our school grammars and so much lauded in certain quarters rest upon superficial and arbitrary knowledge, and the use made of them smacks very generally of charlatanism.

I am aware that many schoolmen will say that they have tried these schemes for representing visually grammatical relations, and that the results are good. But what is their test? Skill in diagramming? Is it not possible that teachers may deceive themselves at this point? As the paper has sug-

gested, the diagram at best can go only a little way. There are a thousand variations that no system yet devised can exhibit. The diagram as a method of recitation or examination must remain hopelessly deficient. As now used, a service is put upon it which, from the very nature of the case, it cannot perform. I am persuaded that, as a rule, it hinders rather than helps in the acquisition of grammatical knowledge.

The analogy sometimes drawn between the use of the diagram in grammatical analysis and in the exact sciences is false and misleading, for the reason before pointed out, namely, that in geometry, for example, the abstract conceptions with which the pupil has to deal are well defined and their relations exact. They are thus capable of visual and uniform representation. Again, lines and angles and planes are elements in the discussion and correspond to the written or printed words in grammar rather than to any arbitrary system of hooks or loops surrounding and connecting words.

I conclude, as I began, by welcoming this paper and all other agencies that tend to stimulate independent thinking on the part of teachers. Let us bring ideas to bear upon our work. Careful, conservative *thinking* is our great need upon this as upon every other subject.

Superintendent W. S. Perry, of Ann Arbor, continued the discussion:

The diagram has successfully resisted all attacks upon it for a generation, and has vindicated its right to a prominent place in the teaching of grammar. This is an age of pictorial teaching, and he who can skillfully use the crayon to make clear the relations of an abstruse theme is most happily equipped for his work. I could not adduce a better argument against the theory of the paper just read than stands forth in those diagrams on the blackboard. The writer attempted to explain the development of thought from the exclamatory cry to the sentential form. The idea was obscure, not readily apprehended, until she pictured it in well-devised diagrams, when it at once became luminous.

William T. Harris says that grammar is the most abstruse and difficult of the common-school branches, and at the same time the most disciplinary. Nor is the disciplinary value lessened when we call into service the eye through the medium of the diagram for a readier way to grammatical relations. Is this method not rather in accordance with the best pedagogy of the day?

All the sciences are dependent upon the diagram for their fullest comprehension, some of them to a large degree. What could the student, stumbling among the principles and theories of geometry and astronomy, do without his diagrams?

The strongest objection to the diagram is that pupils are sometimes misled by it, or blunder in its use. But I venture the contention that the average grammar-school pupil uses his diagram in analysis quite as effectively and to the point as the high-school pupil does his in geometry. It is not too much to say that grammar as a productive study has been made possible in the seventh and eighth grades by the diagram.

Dr. B. A. Hinsdale regretted that he had not heard the earlier part of the paper. Addressing himself to the question of diagramming, he said that he tested it by his own experience. The simple system of diagrams in Clark's Grammar, used by a good teacher, had helped him materially in getting a firm hold of the English sentence, and so of analysis. He had also found diagrams serviceable in teaching grammar, and was confident that he could again use them with effect. Diagrams are only a mode of exposition, not a substitute for thinking. The same might be said of the syllogism, which is only a show-box. One reason why teachers of grammar have favored diagrams was that they save time. Twenty pupils could put twenty sentences on the board while one pupil was orally analyzing his sentence, and the competent teacher, almost with a sweep of the eye, could tell whether they were right or wrong. No doubt diagrams could be abused, and had been abused. They had been overdone. But the "abuse" argument was a dangerous one to use. The syllogism might be abused in teaching formal logic. The maps used in teaching geography are very misleading. Geometrical figures sometimes mislead. He had known a student who was nearly through college to actually measure a figure on the blackboard, to show that the theorem was not true. Diagrams need not mislead or conduce to mechanical teaching, and he was in favor of their judicious use.

Professor F. A. Barbour, of the Michigan State Normal School, also favored a judicious use of the diagram in teaching grammar for three special reasons: first, it awakens interest in the subject with young pupils; secondly, as a means of illustration it makes an abstract and difficult subject easier of comprehension, and, thirdly, it is a great economy of time to both teacher and pupil.

Friday afternoon a paper was read by Professor Joseph V. Denney, of Ohio State University, on "Two Problems in Composition Teaching." The following is a synopsis of the paper which is to appear in full in Professor Scott's "Contributions to Rhetorical Theory" series:

Reading does not compel the student to exercise his powers of selection, abstraction, and imagination in the creative way in which they must be exercised by one who has to write; nor does reading give the student direct

power and skill in organizing his own ideas. These powers, indispensable to the writer, can be trained to act readily only by long practice in composition with helpful criticism. A selection read as a model for composition work should be accompanied by writing, the composition subject to be susceptible of similar treatment; and selections of standard prose should be memorized as types of idiomatic expression. How to give life and reality to school composition work was the second question; how to make something more of it than stringing sentences together. This could be done by prescribing in extended form topics which involve three things: an actual social situation in the life about the student or in his mental experience, the student himself as part of the situation or experience, and a designated reader or class of readers to be addressed and interested. The student should be trained to handle a large number of typical situations as they occur in life. He would learn by practice what elements to select as essential and peculiar in a given situation; he would learn to exercise his imagination on the situation with his designated reader in mind, and to organize the selected elements with reference to a specific use. Such work would be first-hand work and not book work; it would be as real in its way as that of the journeyman in literature.

A paper on "The Teaching of English Grammar" was read by Professor O. F. Emerson, of Reserve University.[1]

Friday evening an address was delivered by Hon. George B. Aiton, inspector of high schools for the state of Minnesota, on the subject, "The Purpose of English in the High School."[1]

On Saturday morning the session of the Schoolmaster's Club was devoted to a discussion of the question, "What amount of work per week may fairly be demanded of the high school."

Papers were read by Principal E. O. Marsh, of the Bay City High School, and by Superintendent F. R. Hathaway, of Flint. Principal Marsh's paper was as follows:

AMOUNT OF WORK DEMANDED OF PUPILS OF MICHIGAN PUBLIC HIGH SCHOOLS

The discussion of high-school curricula may be approached from two sides, from the side of the study and from the side of the pupil who studies. Many a nice argument and not a few ideal courses of study have failed in the practical test of the schoolroom because the pupil's capacity for work, on the one hand, and his limitations, on the other, have been lost sight of in the consideration of comparative educational values, relative time allotments, the many demands of an extensive list of studies and questions of a similar

[1] These two papers will appear in the March number of the SCHOOL REVIEW.

theoretical nature. And even when the matter is approached from the other side and careful consideration is given to the pupil's powers and limitations mistakes not infrequently are made.

In order to introduce this morning the discussion of the amount of work that may fairly be demanded of the high school, I have undertaken to collect and tabulate data illustrating present practice in Michigan public high schools, drawing such obvious conclusions regarding present tendency as the data seemed to warrant, and attempting on my own part no solution of the problems involved.

In collecting the data I found it expedient and not altogether illogical to confine my attention to those high schools of the state that are on the accredited list of the University. From sixty of these, by catalogue or personal letter or both, information was immediately available for the purposes of this paper; and as this number includes nearly all the stronger public secondary schools of the states as well as many of the smaller and weaker, the policy pursued by them represents with sufficient accuracy the prevailing policy of the state.

A majority of the sixty schools considered have a recitation period of forty-five minutes, the number having a shorter period than this being enough greater, however, than those with a longer period to reduce the average for all the schools to forty-four minutes. The range is from thirty to sixty minutes; but the schools that have the shorter periods almost invariably require more recitations from the pupils, so that the amount of time per day or week is fairly equalized. Many schools also have some periods of one length, some of another, the shorter periods often being devoted to such branches as music, drawing, current events, rhetoricals, etc., for which little or no outside preparation is required. These facts rendered the task of comparing the time allotments of different schools a rather difficult one and the numerical summaries and averages not entirely exact.

With such a wide variation in the length of the recitation period, it was not surprising to find a similar variation, though largely reversed as regards the individual schools, in the number of periods per week. The extreme range of variation is from thirteen to twenty-five. But where the number is less than seventeen, it is only in a limited portion of the course, usually the first year; while where the number is more than twenty, the additional hours are generally found in the later years of the course and are due to laboratory studies, in which the number of hours of school work has been increased, and the required outside preparation correspondingly decreased; thus making but slightly greater demands upon the pupil's time than when a less number of hours of school work are required, all of which is prepared out of school. Counting, then, two hours of laboratory work as equivalent to one of prepared recitation, and averaging the work of the four years for such individual schools as require a varying number of hours in the different years of their

course, the range was found to be from seventeen to twenty. But it is somewhat surprising to learn that 60 per cent. of all the schools require at least twenty periods per week throughout the four years, of which substantially *all* is prepared recitation, time for the necessary laboratory work being either added to the regular number of periods or gained at the expense of a proportionate number of recitation periods naturally belonging to the sciences themselves. The average for the state is about nineteen hours of prepared recitation, while in only 10 per cent. of the schools is the number as low as seventeen for the easiest year of the course.

I say this high average seems surprising in view of the general objection made two or three years ago to the twenty-period programmes of the Committee of Ten, in which only fifteen, President Eliot explained, were intended to be prepared. It is also somewhat surprising when the policy of other states is observed. A recent Massachusetts school report gives the number of high schools in that state as 247, of which 224, or 92 per cent., were asking but fifteen periods per week, while the small fraction that asked more did so merely to make room for studies demanded by local sentiment or not strictly of secondary grade. Does this indicate that we are getting from a fifth to a fourth more work from our pupils than they? If so, then either we are asking too much or they too little — or somewhere between the two is a golden mean. Or does it indicate that their recitation period *represents* more than ours, that the same amount of preparation by the pupil is concentrated on fewer studies, and the recitations correspondingly intensified? Certainly the number of recitation periods is no criterion of the amount or the character of the work a school is doing. Within any single school no two studies of equal time allotment in recitation periods make equal demands upon the pupil. If all the studies were as hard as the hardest, fifteen periods per week would be more than enough in any school, while were they all as easy as the easiest, thirty would hardly be too many. Practically, then, the number of periods conveys no absolute information and offers no basis for argument, except as they may indicate a longer or a shorter list of studies; and then the question is on the relative advantages of a *broad* field of knowledge rather shallow and lightly worked, and a *narrower* field deeper and worked intensively. This, of course, is an important consideration, and one often lost sight of in the making of schedules. As a matter of fact, what our periods do represent varies as much between schools as it does between classes of the same school. It depends upon many things — the tone and policy of the school, the nature of the branches studied (their extent and content), the capacity and disposition of the teacher and other considerations not capable of reduction to statistical form. And yet one may presume that each teacher is attempting with more or less success to bring his class up to a rather well-defined standard of excellence — a standard largely imposed from without, set for him by custom, by tradition, by the consensus of opinion of teachers of the same branch

throughout the state and the country, by college requirements and by other influences over which he has but little control. Undoubtedly the system of admitting to the University of Michigan on diploma pupils from schools that have been examined from this one central point and required to approximate one standard has done much to unify the practice of the various schools of the state; and this is not the least of the benefits for which the schools have to thank the diploma system of this university. Assuming, then, that in the fundamental studies the teachers of those branches in the different schools are aiming at substantially the same results, when we find one school requiring five of them at one time and another only four, either the work is done with less intensity in the one than in the other, and consequently the results are *not* the same, or one or the other school has not given due consideration to the pupil's powers and limitations. And the school that asks for the completion of forty courses before graduation is either not doing work of the same character as the one that asks for thirty, or the pupils are working one-third harder. The same process of reasoning may be applied to the policy of the state as a whole compared with that of other states — as, for instance, that of Massachusetts indicated above.

President Eliot before the New England Association of Colleges and Preparatory Schools made the following charges against the schools:

"Somehow or other we have established in this country an exceedingly low standard of work for children in schools; the amount of study done by the pupils, and the amount of genuine teaching done by the teachers, are both deplorably low. The average American parent has got fixed in his mind too low a standard of mental work for his children. We cannot make a good school, or a good school system, until this fundamental difficulty has been overcome.

"It is to be observed that the standard of work in schools was higher forty or fifty years ago than it is now. School work has become in some respects more mechanical and uniform, and therefore more irksome and fatiguing, because the interest which an intelligent child can take in it has diminished. The real difficulty is the dullness of school routine. The remedy for the evil which has been called overwork is therefore the increase of interest combined with physical training and good ventilation. Forty years ago the actual number of school hours per week was larger. There were also two sessions in secondary schools instead of one. The vacations have been prolonged — that is, there is more vacation time in the secondary school year now than there was forty years ago — and the same is true concerning college vacations. Further, it seems to me that the pressure exerted by parents on their children to work for intellectual advancement has distinctly diminished, and that the distractions taking the attention of children from school work have distinctly increased. For pupils from thirteen to eighteen years of age the permitted distractions from mental labor have increased very much within my memory. All colleges, as well as all secondary schools, suffer from this

cause. The remedies for this state of things are doubtless complex and slow of application; but the principal remedy I believe must be found in a change of mind on the part of the parents."

One may wonder whether some of these charges are as true against the schools of Michigan with their nineteen hours as of Massachusetts where but fifteen hours per week are required. But it might be supposed, on the other hand, that the additional hours on the Michigan programmes are due to the introduction of such studies as music, elocution, drawing, manual training, and others that require little or no outside preparation and are of such a nature as to furnish pleasant relaxation from the strain of the regular work. The supposition is not founded in fact. The returns received from inquiries on this point indicate that the so-called "unprepared recitation" is almost unknown in the state, except as we apply the term to laboratory work in the sciences; and in the case of the laboratory work no relief is offered the pupil, for the periods are doubled in length.

I might interject at this point, that, for the purposes of this paper, it was found necessary to make estimates and comparisons only of such courses as were commonly found in high schools, small as well as large, and avowedly on the same educational plane, neglecting such courses as commercial and manual training which are found in only a limited number of high schools, and others which have been established to meet certain local demands.

Taking into consideration, then, none but classical, Latin, scientific, and English courses, only 10 per cent. of the schools make any use whatever of the "unprepared recitation" outside of laboratory work as accounted for above; and in all but 5 per cent. such unprepared recitation as *is* called for is in addition to the regular number of periods. As might be supposed, drawing and music furnish most of this additional work. In not over two schools out of sixty is there confessedly any unprepared recitation in any subject accepted for college admission except in one branch — namely, English; and even in this the number is small and growing smaller. There is an evident tendency on all sides to stiffen the work in English.

The high schools of the state, then, are demanding an average of nineteen periods of forty-four minutes per week of prepared recitation. Is this too much or too little? The answer will depend entirely on the character and amount of preparation required. The nineteen hours are not equal to one another in the drafts they make on the pupils' energies either in the recitation or the preceding preparation. This depends on the nature of the study, the policy of the school, the ambition of the teacher, etc.; and for similar reasons, schools having the same studies for the same number of hours may differ widely. If this paper were dealing with the theoretical side of the question, it would be profitable at this point to take the list of studies required, set what would seem to be a reasonable standard of attainment in each, estimate the amount of time the average pupil would

need to come up to that standard, and from this result determine whether the schools as a whole or certain individual schools were asking too much or too little. Or one might approach the subject from the side of what ought to be rather than what is, and compare an ideal course of study with present practice. Most of the fundamental problems of secondary education would be involved in such a thesis; and undoubtedly the discussion this morning will most profitably center upon some of these questions. But to determine on more or less theoretical grounds whether we are asking too much or too little of the high school, by considering what these nineteen periods per week either do or should represent in intensity of effort or quality of results, is beyond the range of this paper. And practice varies so much in different schools and with different teachers regarding the relative importance attached to the various studies, the methods used in teaching them, and their consequent ease or difficulty of pursuit, that it is quite impossible to reduce the matter to any statistical form or present any general averages. But every principal or superintendent knows whether *his own* school in its present practice is making a fair demand upon its pupils' energies. This fact led me to inquire what have been the recent changes in this matter, and what changes, if any, are at present contemplated. The answers to these questions indicate present tendency. The smaller and younger schools reported a notable increase in work required, in recent years, due in large measure both to their own natural growth and development and to the necessity of raising the standard of attainment when they sought to meet the admission requirements of the University. I wish to read a number of brief extracts from the replies received, without mentioning the schools; and if the fact that it is largely the smaller and younger schools in which there has been much recent increase in absolute time requirements is kept in mind, the apparently radical differences between the replies will he better understood. Where recent changes have been made in the older and larger schools, they have usually been either in the opposite direction or in the direction of greater intensity on fewer studies or recitations. Many interesting matters which are germane to this discussion are touched upon in the extracts. To avoid confusion I shall call them by number.

1. The amount of work required of pupils in the high school has largely increased within the past few years, principally owing to the large amount of work required by the University for matriculation.

2. The work has been increased to correspond with university require ments.

3. The greatest change in this regard consists in lowering the number of recitations per week in several studies to two and one-half, three, or four. This has permitted the introduction of considerable work which previously could not be given in the high school.

4. We have not changed the total amount of work required, but have

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abandoned the policy of teaching any subject for less than five recitations per week. Laboratory work in physics and chemistry is not easier and demands no less preparation than recitation. In addition to the regular number of hours, in some courses where drawing enters, five more unprepared lessons are required during two years. The pupils have, in addition to the above, five periods of twenty minutes each for music.

5. Within the last five years the requirements for entering the high school have been increased so that more attention could be given in the high school to the higher branches.

6. More laboratory work is contemplated. Also an effort is being made generally to bring the school into closer touch with outside life.

7. The growth of laboratory work makes itself felt in crowding of hours.

8. We have greatly increased the amount of work in the last five years. In the future we shall ask for more work in experiments.

9. Within the last four years the amount of work has been increased about one-fourth.

10. We have reduced from twenty-two to twenty periods per week.

11. Any change that has been made has been to secure an increase in the *quality* of work rather than quantity. Until three years ago there was a deal too much cramming done. We are endeavoring to teach pupils to think.

12. We have changed from six courses to three, enlarged the work in chemistry and physics, and shortened the number of recitations per day. We do not contemplate introducing more studies, but to get pupils to put more thought into what they do study.

13. We have been moving toward more work in fewer subjects. Greater thoroughness is our aim.

14. Laboratory methods in mathematics will be tried with new classes, somewhat after the plan in Evansville, Ind. Three periods per week are devoted to the study of English classics and two to rhetoric and composition throughout the entire course. The results thus far seem better than when rhetoric was taken as a separate branch for one semester.

15. The most important innovation — eight or ten years ago — was the introduction of the study of English classics throughout the whole high school course. It is required of all pupils.

16. We have added more work in general English and laboratory, and we find in our increased work an increased interest in these subjects.

17. The work in English is now much stiffer than formerly, and it is planned to make it still more so. This year for the first time in several years the seniors are all required to take English three times a week. We have also got United States history into the last year of both our scientific and English courses.

18. The only changes of importance in our course are: first, giving, as we think, a uniform and thorough course in English to all pupils in the high

school regardless of courses chosen; and also, to offer no course which does not require four years of a language other than English. This may be four years of Latin, of German or of French, or two years of each of any two of these. We have had this in successful operation for a little more than two years.

19. Formerly the classes in general English recited on alternate days. Now there are daily recitations, two-thirds of the time to be given to composition work, which is intended to displace rhetoric as a regular study in the course.

20. If any change is made, it will be to reduce the number of periods per week.

21. Our policy is to lessen the amount of work required of pupils if possible.

22. We contemplate increasing the amount of time allowed for each subject, rather than requiring any additional studies.

23. We want more intensive work.

24. The policy of this school will be to ask for less work, wider range, better preparation.

. . . . . .

And so on. The rest are of the same tenor. Taking them altogether, we are justified in drawing certain conclusions as to present tendency. The opinion is evidently widely prevalent that the limit has been reached, probably passed, of what may fairly be demanded of the high school; that "it is wiser to demand a moderate amount of work which can be done calmly and thoroughly, leaving a little time and strength to spare for other interests, than to force our requirements up to the highest pitch of possible attainment with the certainty that the pupils will either shirk or break down under the excessive strain." The University entrance requirements, plus the demands of the patrons of the schools, plus the idiosyncrasies of local school officials, principals and superintendents, have altogether operated to crowd the curricula with long lists of studies, which it is felt cannot be further extended without disastrous results, and which might be shortened in a majority of the schools with much profit.

Among the most noticeable influences that have operated to increase the demands upon the pupil's energies are the rapid expansion in recent years of laboratory methods in the sciences, and a growing recognition of the importance of more extensive and painstaking work in English. As other studies have not readily yielded a portion of their time to these younger brothers of theirs the result is evident. There is also noticeable in the replies received a feeling in some quarters that the demands of the colleges are too great, and that a solution of the problem of crowded programmes in the secondary school rests largely with them. And finally must be noted the general desire for more intensive effort on fewer subjects—greater con-

tent, less extent. It is probable that in the final answer to the question a number of other elements touched upon in these extracts must be taken into account. At any rate it is evident from the data presented that the problem is before us and pressing for solution.

Superintendent F. R. Hathaway:

There are two distinct powers that are demanding work of the high school. The first of these is the taxpaying public, which demands that the courses offered be of such a nature as will best fit the average girl or boy for the duties of good citizenship. The second power is the University, which demands that the courses shall be of such a nature as will best prepare students for admission to that institution. I am fully aware that certain authorities at the University claim that they make no demands whatever. They simply fix their own requirements for admission, and ask no high school to prepare candidates. I grant this is true in the abstract, but in the concrete it is a subterfuge advanced to enable one to dodge a responsibility. These same authorities are not slow to assume the credit that the University has exerted a most beneficial influence in lifting Michigan high schools to a higher plane than that occupied by similar schools of other states. Every city superintendent in Michigan recognizes the fact that the University sets the pace for all high schools in the state. Moreover, the superintendents in the smaller towns bend every energy toward placing their schools upon the diploma list. In the face of such facts it is idle to maintain that the University does not demand certain work of the leading high schools. It would be much better to come out and say frankly: "Yes, we acknowledge our position and admit that in fixing our requirements for admission we establish the courses in the various high schools in Michigan."

In the past the demands of these two powers, the taxpayers and the University, have been so similar that superintendents and principals have found it possible to harmonize them and arrange courses which would satisfy both. The present and prospective tendencies are, however, such that the demands of these two powers are becoming so radically different that they can no longer be harmonized. Some superintendents, who have been trying to shape their courses to meet the growing demands of the University, have been brought face to face with an aroused community, who, by the exercise of their ballots, have so changed boards of education as to endanger the very existence of the high school. Such protests are not the clamorings of an ignorant mob; they are the honest convictions of some of the most conservative and intelligent men of the state. This leads squarely to my first proposition, viz., the required high-school course leading to the University degree of A.B. is not well adapted to prepare a person for the duties of American citizenship.

From this high-school course, as recommended by the University, the following subjects are omitted entirely: physiology, physical geography, English

history, political economy, civil government, and United States history. Certainly, in the whole range of this college or preparatory course there are no branches that touch more vitally the relation man bears to himself, to society, to the state. Their careful study should enter into the work of every high-school student. To those who would urge that the University only demands a limited number of branches, and leaves the high-school authorities the privilege of adding such other topics as they wish, I would reply: The required preparatory work is more than four recitations per day for every school day in the entire high-school course. To be exact, it is seventeen years' prepared recitations plus four years' essay writing, plus summer vacations on botany, plus several English classics every year. Remember, please, that this work, which is fully four and a quarter recitations per day, or twenty-one per week, through the entire high-school course, is every particle required work. Under these circumstances the kind privilege of adding those branches which would help make the student a better American citizen can only be considered as a little pleasantry, without any other than a sarcastic meaning. To those who think there is always room for one more, I would say that it is well to distinguish between a high-school student and an omnibus.

For the benefit of those who have not followed our classical high-school student through his university A.B. course, it may be said that in the prescribed course the candidate for a degree receives no university instruction whatever in general history, English history, United States history, civics, or political economy. That is, the state takes a boy at the age of seven, provides a course of instruction which covers twelve years in the public schools and four years in the University, sixteen years in all, giving him back to the state a voter at the age of twenty-three without ever having given him a single lesson in the civil government of the state or nation. All this at the expense of the state. Such a condition would be ludicrous were it not alarming. The only redeeming feature is the fact that but few select such a course. Five hundred years ago the state took a boy at the age of seven and for the next seven years bade him serve the ladies that he might learn politeness; then for a similar period he served men that he might learn his duty to his superiors. At the age of twenty-one he began the service of the state. We, with our boasted advancement in matters pedagogical, have so far progressed that in the closing decade of the nineteenth century we are able to give the American citizen all the instruction he needs in the civil and political history of his own country while he is still in knee pants. Wondrous progress! Marvelous advancement! Do you ask me as a superintendent of public schools what work can safely be demanded of the pupils in the high school? I reply, as an American citizen, that we cannot safely demand that the instruction which most deeply concerns the safety of the republic shall be omitted entirely. The only wonder to me is that the patriotic, common-sense, tax-

paying public have not already demanded the abolition of all such schemes of public instruction.

In preparing students for the University Ph.B., B.S., and B.L. courses this objection does not obtain in the same degree. The amount of required work is the same, twenty-one recitations per week, but in this work we have an opportunity to teach a half-year of United States history and a half-year of civil government. No provision, however, is made for either English history or political economy. The above preparatory work seems insufficient when it is remembered that students may graduate from any of the literary courses in the University without any work in American history or civics. Moreover, the only history required in any course, other than that developed in connection with the study of the ancient classics, is for the B.L. degree, and simply covers that portion of the European history from the fall of the Roman Empire to the outbreak of the French Revolution. This is the only required history in the entire literary department of the University. In view of this fact ample opportunity should be given to introduce such branches as English history, American history, civil government, and political economy in every high-school course. Sixty-eight high schools from which I have received returns sent to the University during the year 1895–6 400 students. By the report of the state superintendent of public instruction these same high schools enrolled that year 12,000 students. That is, one in thirty, or about 3 per cent., of the high-school students enter the literary department of the University. I maintain that it is not a sound public policy to deprive 11,600 young men and women of a knowledge of the history and civil government of their own nation in order that a select 400 shall be given sufficient knowledge of ancient literature to enable them to satisfy the growing demands of a few classical enthusiasts. The dangers that threaten this republic cannot thus be averted. As long as this condition continues the public schools of the state will fail to meet the expectations of those who believe they should be the greatest safeguards of the country.

My second proposition is: The amount of required high-school work is so extensive that it cannot be sufficiently intensive. This defect, which is noticeable in the requirements for 1896, is still more patent in the requirements for 1897.

From the paper of Principal Marsh we have learned that the average period of recitation in the accredited Michigan high schools is forty-four minutes. From the same authority we discover that 90 per cent. of these same schools now require over seventeen prepared recitations per week. With these facts in mind I addressed letters of inquiry to the principals of these accredited schools asking them if, in their opinions, the requirements for high-school graduation should be increased, diminished, or left as they are. Of the entire eighty I received answers from sixty-eight. Now I profess that these gentlemen, principals of high schools, constitute the most

capable jury to which this question can be referred. From years' experience, not from guessing or theorizing, they know what can be accomplished by high-school pupils. Out of the sixty-eight answers received, six favored an increase. The chief reason assigned for this increase was that the University requires too much of its students, and we must help them out. It seems never to have dawned upon the minds of these principals that it might be possible to lop off a little from the upper end of the University courses. Of the remaining sixty-two replies there were twenty-seven which advocated leaving the requirements as they are, ten that asked that the work be not increased, and twenty-five that said: "Decrease the scope of the work that we may do better work." The vote therefore stood six to sixty-two on the question of increasing the high-school requirements for graduation; which amounts, as I have shown and will further prove, to the same thing as increasing the requirements for admission to the University.

Let us now see what requirements the University has fixed for admission in 1897 and thereafter. These have been established without calling into consultation a single representative of the preparatory schools and in direct opposition to the almost unanimous judgment of the principals of these schools.

First, in the department of English. In 1896–7 the required books from which compositions are drawn number seven, for 1898 there are six, but for 1899 the number is increased to eleven. Then follows the introduction of an entirely new line which says: "In addition to the books just named, it is expected that several other English classics will be read each year." Remember please that this is in addition to the 1895-6 requirement, which specified that the "study of English classics should form a regular exercise throughout the whole preparatory period."

In the department of Greek there are inserted five words which increase the amount of required work fully one-sixth, or 16⅔ per cent. These innocent-looking words are, "and two books of Homer," which are added to the old required reading which was three books of Xenophon's *Anabasis*. I am aware that this work in Homer was being done in several of the high schools, but it was purely optional and the result of local conditions. By making it necessary reading all work in American history and civics is the more effectually barred from this high-school course.

In the department of science the optional branches, geology, physiology physical geography, and astronomy, are dropped entirely, and the work is confined to the three lines of chemistry, physics, and botany. In the first of these studies the amount of the work is increased from a half-year to a full year. This necessitates a chemical laboratory, a luxury which many of the smaller accredited high schools cannot have. Laboratory work in physics is also "urgently advised," but cannot be given by many of the smaller schools. Thus the tendency in these departments is to restrict admission to the Uni-

versity to those young people who are fortunate enough to have attended one of the larger preparatory schools. Not forty high schools in the state have the required laboratories.

Not to be behind in this scramble for work already accomplished, the head of the department of botany, after recommending but one text-book that "will indicate the kind of work desired," a book which he himself has written, specifies that it is "specially desirable that all who expect to continue this subject in the University should give some additional time during the summer vacation." Not content with demanding twenty-one forty-four-minute recitations during the entire four years, the very vacations of the high-school student are mortgaged that he may enter the University.

Next, permit me to call attention to the fact that the requirements for admission in 1897 and thereafter are so arranged that in the last year in the high school a classical pupil must study the following branches: Greek, Latin, geometry, literature, algebra, and English grammar; all these besides physics and chemistry, which according to Professors Carhart and Freer should both be taught in the twelfth or senior year, and each should follow the other. This means that in their last preparatory year our high-school pupils must carry five studies throughout the entire year, and each of two others a half-year. In other words, they must recite from nine in the morning until four in the afternoon and prepare all lessons outside of school hours. Now, gentlemen, I submit that if you had called into consultation a few practical high school men you would not have made such an absurd blunder in framing your requirements for admission in 1897 and thereafter.

Two or three times in this paper it has been stated that the new requirements for admission necessitate twenty-one prepared recitations per week. What is the proof? From this pamphlet (Requirements for admission of undergraduates to the department of literature, science, and art in 1896 and 1897) I learn that the required work is as follows: One year rhetoric, one year general history, four years reading, two years algebra, one year geometry, one year physics, one half-year botany, one half-year English grammar, two years Greek, and four years Latin; thus making seventeen years in all. To this are added four years essay writing, plus summer vacations on botany, plus several other English classics every year. Seventeen years work accomplished in four years makes an average of four and a quarter studies per year. This makes over twenty recitations per week, and the extra work added easily raises it to twenty-one. The amount of work required for the Ph.B., B.S., and B.L. courses is the same, the studies pursued being somewhat different. If Principal Marsh's average time of high-school recitation is correct, viz., forty-four minutes, this leaves the high-school student but two hours during the sessions of high school to prepare his recitations and necessitates fully three hours of daily study outside of school; an amount of work which I do not think can justly be demanded of boys and girls between the

ages of fourteen and eighteen. You must remember that these young people are just emerging from the weakest period of their whole career and are just entering the social world. Their minds are not concentrated upon school work, neither can they thus be concentrated as effectually as when at an older age they enter college and for the time being withdraw from society. My honest conviction is that while the character of the work now demanded by the University of the high school precludes the possibility of introducing more important studies, it is equally true that the present extent of the work makes desired thoroughness impossible. The almost universal observation of intelligent citizens bears me out in this statement.

My third proposition is: The tendency of the new requirements is to remove the University farther from the people and limit the circle of its influence to those who have had an opportunity to prepare in the largest secondary schools. We have already seen this tendency at work in the department of physics and chemistry. Page 16 of the official pamphlet informs us that hereafter the minimum requirement of foreign language in any one course shall be two years. That is, the distinguishing feature of the old B.S. or English course is removed. True, we are informed that students, deficient in these two years of language work, may make up the language and become candidates for degrees. This means that they must take five years to complete their course. Even this crumb of comfort is taken from the English student by an announcement found on page 13 which reads as follows: "It is intended in the near future to fix the minimum requirement in foreign language at four years, and the schools are urged to conform to this minimum as soon as possible." The two parts of this sentence must be considered separately. First, the statement that it is intended in the near future to fix the minimum requirement in foreign language at four years. The sixty-eight accredited high schools above referred to, graduated 1446 students last June. Of this number 643, or 44 per cent., had four years of foreign language. The remaining 56 per cent. are just as eligible to admission to the university according to the requirements of 1895–6 as are the 44 per cent. How can you justify that policy which at one stroke decreases the number of possible candidates for admission over one-half? What do you think the students, the principals, the superintendents, the newspapers, the taxpayers, the legislature, the governor of this state will do when you disfranchise 56 per cent. of the qualified candidates in this state? Does not such a policy remove the University farther from the aspiring young men and women of Michigan? But, say you: "The high schools will conform to our request and require four years foreign language of all their graduates." Don't be too sure of that. For the past ten years we have been trying to keep time to a company of gentlemen who have been turning a secondary-school kaleidoscope in which the fragments of a high-school curriculum have arranged themselves in most fantastic forms. I maintain that compliance with this last request would

greatly reduce the number of graduates from the accredited high schools. Let me call your attention to some significant facts. From the sixty-eight schools that reported to me I eliminated all from the upper peninsula. The remaining, or lower peninsula schools, I divided into two groups: first, those which returned half or more of their graduates as having had four years or more of foreign language; second, those which returned less than half their graduates as having had four years foreign language. I next computed in the twenty largest towns of each class the ratio of high-school graduates, class of '96, to the population. As the school population bears a constant ratio to the entire population, the above computation is fair. The result is astounding. In nearly every case, irrespective of the size of the city or its location, the number of graduates per thousand population was smaller in first class than in the second. The average ratio of the entire twenty towns in the first class is one graduate to 647 population, while the average ratio of the same number of towns in the other class is one graduate to every 237 people. You will notice that the ratio in the latter case is nearly three times as great as in the former. In only five towns of the first class, and these small ones, does the ratio compare favorably with that of the second class. I personally know that in every one of these five schools the foreign-language work is in charge of either the principal or superintendent who has been several years in his present position and is an enthusiastic linguist. In that city where four years of foreign language are now required of all graduates the ratio is 1 to 824. From the above facts I cannot but conclude that the enforcement of the four-year requisite would greatly reduce the size of the graduating classes in our high schools.

The high school is the poor man's college; and for one I shall never knowingly be a party to any scheme which tends to deprive the children of the common people of the full benefits of these schools. You ask me what we will do. I reply that there is already afloat in this state a sentiment that the time has come when it is best to reorganize the high-school courses on the plan of the greatest good to the greatest number. How then shall we conform the high-school courses to the requirements of the University? I know not; but I imagine that in the future the conforming act will be performed by some gentlemen in Ann Arbor, and not by the entire state of Michigan.

It is the historic boast of Michigan University that it was founded for the benefit of the common people. It has been a matter of state pride that a young man can take a three years' course at this institution for what one would cost him at Harvard or Yale. The enforcement of the proposed policy would close the doors of the University to more young men and women than would a law which doubled the cost of attendance. Is this a proper policy for an institution which is supported by public taxation? How can you go before the people asking for constantly increasing appropriations and at the same time close your doors more and more closely to the sons and daughters

of these same people? How can you ask an agricultural state to maintain an educational institution whose avowed policy is to fix the requirements for admission in the near future so that few but the graduates of the largest city schools can enter? These are questions well worth consideration.

Permit me to repeat my three propositions. First: The required high-school course leading to the University degree of A.B. is not well adapted to prepare a person for the duties of the American citizenship. Second: The amount of high-school work is so extensive that it cannot be sufficiently intensive. This defect so noticeable in the requirements for 1896 is still more patent in the requirements for 1897. Third: The tendency of the new requirements is to remove the University farther from the people and limit the circle of its influence to those who have had an opportunity to prepare in the largest secondary schools.

Principal Volland, in opening the discussion of the papers read, deprecated the fact that the last speaker did not stick to the subject under discussion. He said:

The amount of work in the Grand Rapids High School had for some time agreed with the average, nineteen recitations a week, as given in the first paper. However, at the present time, twenty hours are being required. This includes both the prepared and the unprepared work. Of the latter the ninth grade has five hours and the twelfth one. A year ago some statistics were gathered by principal Greeson for the purpose of showing how much time the pupils were spending in school work. The figures were given by the students themselves and the "personal equation" is without doubt largely present. It was found that in the ninth grade 50 per cent. of the pupils spent less than six hours a day on their school work including recitations and laboratory investigations, and 4 per cent. more than seven, leaving 46 per cent. who spend six to seven hours. In the twelfth grade 17 per cent. spent less than six and 37 more than seven. It was found that a majority of the pupils spent between six and seven hours in their daily school work. Does this show that the pupils here are or rather were putting too much time upon school work? At least this amount of work according to the experience of this school can be reasonably demanded of high-school students.

Mr. E. C. Goddard, of the University of Michigan, followed Mr. Volland and said:

I shall discuss the paper only in so far as it bears on the subject before us. I am not appointed to champion the requirements of the University. No one perhaps approves them in every particular as they are the result of compromise and always must be. I myself entirely agree that United States history, for example, should be taught and required in preparation for every course in the University.

But are the requirements of the University so heavy that without requiring too much work per week from the pupil—more than twenty hours the writer of the paper thinks—the schools cannot meet the demands for citizenship and the requirements for entrance to the University? I answer they are not. Both requirements can be met. The correctness of this reply is conclusively shown by the fact that many schools have met them and are now meeting them with no serious difficulty. When in high-school work I planned a course of study, which is now in use for the third year, in which students in every course, including the classical, have all the work required for entrance to the University, and in addition a half year of English history, and recitations three times per week for a whole year in United States history and civil government. The maximum number of recitations per week is seventeen in all courses.

But the hours per week spent in recitation is no very certain criterion of the amount of work required. Twenty hours in one school may mean less than seventeen in another. Confessedly many of our pupils break down in health and it is a serious matter if it is overcrowding in school work to which this must be charged. It is my own impression that this is far from being the cause. If parents could disabuse themselves of the idea that "young America" must "come out" socially at the age of fourteen or fifteen our high-school pupils would find school duties no such burden. I grant that our young boys and girls are not generally equal to a full school course and the strain of an exciting social season and their ability to do good school work and maintain health decreases directly as their attention to society increases. One of the strong reasons for this position, one that we all observe every year and that seems to me unanswerable, I find in the fact that pupils careless in the early part of their high-school course again and again are seen to come to a realizing sense of their condition later, and then they carry not merely the amount of work on the curriculum, but make up large amounts of back work as well, and this notwithstanding the fact that their early sins put them at a great disadvantage in later work and that often they are but indifferent students at best. Surely, if this can be done, they should have found no difficulty in carrying regular work throughout the course.

It is my experience that few students break down because the school course demands too much of them. Far oftener it is some cause over which the school has no control. I believe in reducing the number of recitation hours to the smallest possible number consistent with the best results—seventeen seems to me better than twenty—but I most emphatically do not believe that our schools are at present requiring more than, in all faithfulness to their duty and with due consideration for their environments, they should demand of the average pupil. On the other hand, I believe without harm to the pupil's health, and with advantage to his highest welfare, we might do even more than we at present are able to accomplish, if the school could have its reasonable share of the energy and interest of its boys and girls.

Professor M. L. D'Ooge spoke in reply to the paper of Superintendent Hathaway substantially as follows:

(1) That there is no justice in singling out the preparation for the A.B. course as unsuited to train young men for citizenship. First, because in almost every case students who enter upon the A.B. course have had United States history either in the grammar or in the high school, while many have also had general history in addition to the history of Greece and Rome. Secondly, because the same strictures that have been made on the preparatory course leading to the A.B. degree apply with equal force, if at all, to the curriculum for entrance to the Ph.B. and to the B.S. course.

(2) The new requirement for the B.S. course of a year of chemistry in place of the three optional sciences is believed to be in the right direction. Superintendent Hathaway has been making a plea for *intensive* study, and this plea is a sound one. But this new requirement is in the same line as his plea. If it shall prove that any considerable number of students who desire to enter the University cannot get a full year of chemistry and are thereby debarred from admission, the requirement will doubtless be modified.

The plea of Mr. Hathaway that the two years' requirements in some foreign language is calculated to "disfranchise" a considerable number of candidates for the University rests upon a false assumption. There is not one of the high schools of Michigan that does not already furnish at least as much instruction in Latin, or German, or French as the new requirement calls for. Neither by this requirement nor by that in science has the University placed itself out of touch with the high schools of the state. Certainly, not wittingly. But if it has, the faculty desire to know it.

On behalf of my colleagues I am free to say that we invite any criticism or discussion of our own requirements for admission, in order that we may work in harmony with the high schools. The University and the high schools have one common aim, and this aim has been reached with some gratifying success, because secondary and higher education have been so well correlated through the harmonious coöperation of the high schools with the University.

At the close of the morning session occurred the annual election of officers for the Schoolmasters' Club, which resulted as follows: President, Principal S. O. Hartwell, Kalamazoo; Vice President, Superintendent W. G. Coburn, Battle Creek; Secretary and Treasurer, Mr. E. C. Goddard, University of Michigan, Ann Arbor; members of the Executive Committee, Principal F. L. Bliss, Detroit; Mrs. Samuel Wilner, Central High School, Grand Rapids.

Professor F. W. Kelsey, chairman of Committee on Publication, reported favorably upon a plan whereby the proceedings of the School-

masters' Club should be published in the SCHOOL REVIEW. The arrangement was adopted by the club for a year's trial.

At the afternoon session two papers were read on the topic, "How far should High Schools do Collegiate Work?" by Principal E. C. Peirce, of the Elgin (Ill.) High School, and by Superintendent A. W. Tressler, of Monroe, Mich.

Principal Peirce's paper follows:

HOW FAR SHOULD HIGH SCHOOLS DO COLLEGIATE WORK?

In a paper entitled "The Future of the American High School," presented to the secondary department of the National Educational Association of 1894, J. Remsen Bishop says: "I believe that the province of the American high school has been, is now, and ought to continue to be, the strengthening and broadening, to the greatest possible degree, of its pupils, irrespective of probable destination in life."

How far this is true in the arrangement of secondary courses today, and to what extent it ought to be the basis for determining the length of the course and the amount of work given, may be an answer to the question before us.

The examination of one or two conditions in the interrelationship of the different parts of our educational system may help us to look at the question from a better standpoint—the child is received into the public school today with the meager request that he be clean; whether he have clothing or books is not questioned. These are provided for him in case his parents are unable to furnish them; no impediment may be placed in the way of his attaining such an education as will fit him to take up the duties of life at its different stages and prevent him from becoming a destructive agent in the social life of the state. For about twelve years these opportunities are afforded him without more of his concern than to see to it that he add no physical or moral pollution to those with whom he is compelled to associate. Whether he is benefited by these surroundings and the instruction he is compelled to receive, or is gaining any pleasure in his social environment, he is not permitted to question. The state to which he is supposed to owe his life and condition has decided that her good fortune and continuance depends upon so much training being given to her youth as shall fit them for all the responsibilities of membership. Politically speaking, he must be prepared to vote, socially and morally he must be given a knowledge of his own life and life about him with all its dependent conditions, he must be trained to so mold his life that its influence may be beneficial to society, he is to learn through association with the best teachers and the best products of man's work and thought to appreciate that which is noble and perfect; in short, he must learn to live to his best good and the good of all around him.

The free-school system instituted to effect this condition in the child has been conducted not so much for his good as for the welfare of the state, expecting that her welfare cannot be assured without a corresponding benefit to every individual of that state. With this period the free-school system must be considered at an end; whether the state has accomplished all it intended may be questioned when we notice the continuance of these educational opportunities, but under the restrictions of a paid system. If the paid system were due to individual or corporative institution and the state had given no thought to the further development of her people we might ask whether she had placed the standard as high as it should be and whether she should be content with less than the preparation of her people for the best service they might render.

The establishment of higher institutions of learning, not only of professional and technical character, but also in the liberal arts, acknowledges the value of study continued beyond the point attained in the public school; it also raises the standard of education above the opportunity of the community at large and restricts its possession to a few who are able to afford the expense of tuition and absence from home. The offering of college courses in the high school would open to all the added opportunity for intellectual growth and culture which so many are urged to obtain by going away to college. If, however, the regular courses of the freshman and sophomore years be offered at our high schools the community will receive the benefits which belong to the greatest number, and which the state, by her own acts, has already acknowledged a valuable possession.

Another condition to be considered, prefacing the immediate topic, is the relation between the high school and college. In different states these relations vary just as the higher institutions of the state have associated themselves intimately with the school system, or, in the absence of state institutions, no sympathy has existed between the public schools and the colleges. In one, the high school has been fostered by the university as a preparatory school for those who, having completed the grammar grades, intend to enter upon its courses. In another state the high school has been without any inspiration for strong or progressive work, and has given to its members only such advantages as the majority of the community desired. So it happens that in many districts where the state university has been wholly separate from the public schools or where the independent university has been the sole representative of higher learning, the academy has arisen as a fitting or preparatory school.

Wherever the high school has become subservient to the state university, giving its sole attention to the preparation of so many of its students as at graduation shall be ready and able to enter that institution, the tension placed upon it by the local system at one end and the state university at the other has caused it to oscillate between the condition of the pupils received

and the demand made upon it from above, until its failure to fill the gap has drawn it far beyond its capacity, and warped it into a mere fitting school for a favored few, while the larger number has been left to whatever fate might come from a course ill adapted to their good and failing in the true spirit of a school established to prepare them for the activities of life. While both of these conditions have been in a way unfortunate for the schools, the latter has no doubt been much less disastrous.

The recognition of this lack of completeness in the present limit of the free-school work with the advisability of offering courses beyond the usual four-year limit is shown in the establishment of postgraduate courses in many of our high schools.

How far ought this work to be carried in the high school? The large number graduating from our high schools who will not be able to go to a distant college may rightly demand from the schools all that will enable them to become efficient members of society, successful in the service they are to render their communities.

The present course of four years is not adequate to the needs of those who are never to go to college. If the course pursued has been one of severity and thoroughness limited to the preparation for continued work elsewhere it has yet lacked the application to daily experience that makes all study valuable.

We do not want what is called a more practical or a popular course, nor do we believe the high school should be relieved from the restraint or oversight of the higher institution. What we do wish for the young people of the high school is an opportunity to be shown what the purpose of all this instruction they have willingly received is. They must realize, more than they do now, the value of Latin, mathematics, and biology before they leave the school. The grind of Latin and Greek is as necessary to the well-tempered mind as is the heating and grinding to the perfect knife-blade, but no manufacturer would ever impose his product upon the public without the polishing as well.

We shall take it for granted that the addition of any of the collegiate courses to the high-school curriculum means a corresponding increase in the time spent in the high school and a corresponding decrease in the work necessary to obtain a degree from college. It also means much more; not only will the same relations between college and school remain, and the same zeal be employed in encouraging pupils to continue their studies under the new and broader influences of a college community, but for those who are not permitted to go to college a much more satisfactory course can be given. It will contain not only the valuable discipline of the present preparatory course, but will give some attention to the refining elements of these studies as well, to the development of the artistic side of the pupils' natures, the creation of ideals of beauty and nobility, as well as thoroughness and precision.

We must extend the courses of study, not downwards, but upwards to five and to six years, while at the same time it should be maintained that the college course should begin where the present course of the strong high school now closes; this would be an extension of the free school two years beyond its present limit. Many schools would not be able to maintain such courses; they should then approach them only so near as the means of the locality will permit. Every county should have at least one such school; it should be open to the pupils of any part of the county without extra expense, unless able and willing to bear it. The cost of instruction for these foreign pupils should be borne by the community from which they come, or by the county as a whole. The courses of study should be so arranged and conducted as to admit upon certificate at the end of four years to the state college of liberal arts and at the end of six years to any of the professional schools of the state, while those who remained in the local school for six years should be given credit in the college to be applied toward any one of the baccalaureate degrees.

What can be the possible influence of this extension of the secondary course? The value to the community would not be measured by its value to the school alone—the whole intellectual life of the city and vicinity would be aroused, a higher standard of education would be given the patrons as well as the pupils, the high school in itself would be strengthened, better teachers and more teachers would be required (a sufficient reason for taking up the advanced work for the sake of improving the elementary instruction), the grade teachers, many of whom are products of the high school, would be more efficient with the opportunity of a wider range of study and more thorough preparation as well as in the possession of an additional element of culture quite generally lacking now. The student life of the school would rise to a new plane. The pupil would enter the school realizing the possibility of gaining a foothold in his studies before determining for what he ought to fit himself. If too young at first to settle this question the delay would not be serious. The pressure of class ties, too strong for some pupils to meet today, would be much relieved; they would enter upon their work with a feeling of independence, for they would be in position to complete a course preparatory for life rather than be compelled to pursue work directed to an end they would never be able to reach. Many a young man or woman would be willing to risk a debt for two years' study in college where the necessary expenses of four years would wholly dishearten them.

The University will profit equally with the school by the relief from much of the undergraduate work, the corresponding change in the faculty to meet the demand for more advanced courses and in the better preparation of the students of the professional schools. The whole life of the University, intellectual and moral, would be elevated with the coming of students of maturer years. Its prestige in the state, and its influence upon the schools would be

increased in the closer bonds between it and the lower schools—the work of both would be so harmonized as to make the state system a unity.

Superintendent Tressler read the following paper:

During the past ten years the conviction has been developing that, considering the fact that twelve years have been spent in the schools, the American boy, when he enters college, is somewhat deficient in preparation. This conviction, apparently, is the outgrowth of the study of the German and French school systems and the increased requirements for admission to the best professional schools. Those who have studied the European schools have ascertained that the American boy at the age of eighteen is from one to two years behind the French or German boy in scholarship and intellectual development. On the other hand, the high requirements for entrance to our best professional schools has developed the general feeling that the period of professional study was entered upon too late in life. The colleges, in seeking a solution of the problem, have pointed to the secondary and grammar schools as the weak places in our school system. There also is among schoolmen a growing conviction that the American high school does not occupy its rightful position in our school system, and, furthermore, is not properly articulated with the grammar school.

The proposition that our high schools should do some of the work now done by the colleges is, at once, an evidence of the permanent place which these secondary schools now have in our educational system. Forty years ago secondary education in Michigan was supplied almost exclusively by private academies, and the establishment of public high schools was in many localities vigorously opposed as an unwarranted extension of popular education, a dangerous step, from the standpoint of society, and an unnecessary burden upon the taxpayer. The last generation has not only witnessed the establishment of our high schools but it has also witnessed the development of popular approval. Though our secondary school is securely established and almost universally sanctioned by the people, in modifying and extending its sphere, the utmost care should be taken to preserve the popular approval which it now has in a high degree. While the high school is a fitting school, and as such should preserve the highest possible standard and keep in touch with the colleges, in its larger and wider sphere it is the poor man's college, and should be controlled and developed in such a way as to promote his best interests.

As a solution of the secondary-school problem four methods of modification have been advocated more or less vigorously.

1. Increase the amount of work now done in the school.
2. Shorten the grammar-school course to three years.
3. Extend the high-school course one or two years so as to make it a five or six-year course.
4. Begin secondary work in the grammar schools.

In drawing some conclusions with reference to these four propositions, it is the purpose of this paper to study the question from the standpoint of the smaller high school. Hence the statements made and conclusions drawn do not refer to the larger schools where conditions would seem to be more favorable for adding one or two years to the high-school curriculum.

It has sometimes been said that the high-school pupil could do more work in four years than he is doing at present. Accordingly, an increased number of periods of recitation per week has been advocated. So high an authority as Dr. Nicholas Murray Butler has stated that twenty-five periods per week was not an excessive requirement for the average pupil. However, I believe that high-school men are generally agreed that the maximum limit should be twenty periods. Those who would urge the schools to do more than they are doing now surely are not acquainted with the conditions which exist in our schools. In reality our high schools are more largely finishing than fitting schools. A large per cent. of those who enter, and even those who graduate from them, are not endowed with the capacity to do good collegiate work. They are often studious, industrious, and persevering pupils, but either they do not possess the qualities of mind requisite for mastering the higher branches of the course of study, or have reached the limit of their mental development. The high schools, in my opinion, would not be subserving the purposes for which they are maintained if they raised their standards so high as to practically exclude this class of pupils. For four years the Monroe High School required twenty-two recitations per week, each fifty-five minutes in length. The stronger pupils were able to do the work, but many became discouraged, dropped out of school, or took a five-year course. Then, if it is not simply the purpose of our schools to prepare for college, and we must plan our courses of study and adapt the work required to the capacity of the average pupil, we have already reached the maximum of work which can be safely required.

Another method of gaining time which has been tried in some places is the plan to eliminate the eighth grade entirely, and leave but seven elementary grades. This plan has been tried with apparent success, so far as the saving of time is concerned, at Muskegon and Decatur, Ill. This plan, however, has some objectionable features which will undoubtedly prevent its general adoption. The gulf which now exists between the grammar and high-school grades will become wider. Pupils will enter the high school at a younger age than before, and, consequently, will be less able than they are now to cope with the new studies and new methods of work. Another difficulty which the high schools now have to contend with will be greatly aggravated by this change. This difficulty is the immaturity of many of the pupils. Too many of our pupils in the smaller schools fail because they are too young for the work they are attempting to do.

The third proposition, that which would create a five or six-year course of

study in our secondary schools, while it might work successfully in large cities where comparatively large numbers of pupils could avail themselves of the opportunities afforded, does not offer a satisfactory method of increasing the amount of collegiate work which the smaller high schools can profitably accomplish. The expense of maintaining our high schools, even with small salaries paid and the meager expenditure for reference books, illustrative and laboratory material, is very large compared with the expense of the elementary schools. The per capita cost of education in the high schools is an item which probably has caused more special investigations on the part of boards of education than any other item in superintendents' reports. The demand for extra teachers and the expenses incidental to the course, incurred by the establishment of a five or six-year course of study, would provoke, in most cities, a storm of opposition which would seriously hamper and retard the development and progress of the schools. Because of the liberal spirit which has prompted the people to tax themselves for the support of public education, it must not be inferred that they are willing to increase the burden of taxation. In fact, during the past two or three years special efforts have been made to reduce the expense of maintaining our schools. In the smaller schools the number of pupils who would take the extra work would not be large enough to warrant its maintenance. Accordingly, any change at this particular time which contemplates an extension of high-school courses would, it seems to me, be impolitic, unpopular, and unwise. In order that we may increase the efficiency of our schools and keep up a high standard of work, we must pay higher salaries, so that more highly trained teachers may be secured, and the efficient and capable ones already at work may be retained. This extra expense and that incurred in improving the equipment of the schools are all the additional expenditures boards of education may be reasonably expected to grant in the near future.

It would seem that the only way in which the smaller high schools can do collegiate work satisfactorily is through the time gained by the introduction of secondary studies into the grammar grades. In February 1888, at the Washington meeting of the Department of Superintendence of the N. E. A., President Eliot read his famous paper on shortening and enriching the courses of instruction in grammar grades. While not all of the recommendations which he made have been accepted and tried, the feasibility and advisability of extending secondary work into the grammar grades have been clearly demonstrated wherever it has been introduced. Not long after President Eliot read his paper, my predecessor, Mr. W. H. Honey, began the work of extending secondary education into the grammar grades of the Monroe schools. From time to time modifications have been made as experience would seem to recommend. While many changes have been made in the original plans I am thoroughly convinced that the idea is a good one and entirely practical. The statements made in the following pages are largely

conclusions drawn from our own experience. Certain conditions existing in our city make it a somewhat unfavorable one for trying this plan. The children of foreign parentage (about 50 per cent. of all the children attending school) attend parochial schools during the first six or seven years of school life. Many of these pupils afterwards enter our sixth or seventh grades. They are poorly prepared in English branches, and, as a consequence, we must retain our common branches longer in the course of study. Without the presence of these pupils we could leave off some of the elementary work sooner and extend the secondary work further down.

An important question relating to this work, and one still unsettled, is: What studies should be introduced below the ninth grade? It is generally conceded that the subjects best adapted for this purpose are concrete geometry, algebra, Latin, German, and French. All of these subjects can be taken up by pupils in the seventh and eighth grades. And of all subjects in the secondary curriculum they are probably best adapted to the requirements and capacities of children from twelve to fourteen years of age.

Concrete geometry is probably the least valuable of all the studies proposed for introduction below the high school. While it gives the pupil an acquaintance with geometrical terms and establishes in his mind the simpler and fundamental principles of that study and thus makes the acquisition of formal demonstrations less difficult, it does not materially shorten the course in mathematics or develop reasoning power commensurate to the time employed. Plane geometry seldom is studied before the tenth or eleventh grades, and, in consequence, either concrete geometry must be continued until that time or little benefit is derived from the work.

In most schools algebra forms a part of the course of the ninth grade. Fully one-half of the work usually accomplished in the ninth grade could be finished easily in the eighth grade. Not only will the pupil have saved a half-year, but he will be a stronger, better developed, more self-reliant student when entering the high school. A saving of nearly one half-year in the mathematical course will enable all pupils to complete plane trigonometry in the last year.

Of all the studies suggested for introduction into the grammar grades, the languages seem to be best adapted. At the age of from twelve to fifteen children acquire languages easily and retain their vocabularies and grammatical forms better than at a later period. While the instruction must be adapted to the age and capacity of the pupils, there is no reason why they cannot in the eighth grade be prepared for reading Nepos or Cæsar. The seventh grade, because of the immaturity of the pupils and the lack of proficiency in English grammar, could not be expected to do so much. Of the three languages mentioned, Latin offers the best advantages. Because it is a so-called dead language it is equally difficult for all. It is also the source of many of our English words and thus at once aids the child in

enriching and extending his vocabulary and interpreting many new words. Most schools offer a four-year course in Latin. By introducing it into the grammar grades the continuity of the course is preserved. Inasmuch as most smaller schools offer only a two or three-year course in German and French, if either of these languages is commenced below the high school there must be a break in the course or the number of periods per week must be reduced, either of which would be unsatisfactory. During the past eight years Latin has been taught in our eighth grade. It was discontinued in the seventh grade because it was crowding our English work too much, owing to conditions referred to on a preceding page. In most large cities Latin could be commenced in the seventh grade and German in the eighth grade. Latin is becoming more popular each year in our school. Now more than 50 per cent. of the eighth grade pupils elect it. While a few, never more than 15 per cent., fail to complete the work in the eighth, a correspondingly smaller number fail in the ninth grade. Our twelfth grade Latin class has for three years been doing college work and, while the work is elective in that year, there has never been a request for a substitute. With Latin and algebra in the eighth grade and a three-year Greek or German course in the high school, our smaller schools can do sufficient work to enable their graduates to finish the university courses in from three to three and one-half years. With Latin in the seventh and eighth grades, German in the eighth grade, and a four-year German course in the high school even more collegiate work can be completed.

By the introduction of these subjects below the high school not only will the pupils gain the equivalent of from a half to a year's time, but the general education of the child will proceed more regularly and more in accordance with its natural mental development. The languages will be commenced at the time the child's mind is best suited for them and when it acquires them most easily and readily. The dreary and desolate wastes of reviews in English grammar, geography, and arithmetic will be somewhat relieved. After several years of continuous work in arithmetic, grammar, and geography the child becomes surfeited and longs for a change in his mental diet. The enrichment of the grammar grades is not the least of the advantages derived from beginning secondary studies below the high school. The use of secondary school methods in the grammar grades will, to a large extent, prevent the dawdling, marking-time methods of those grades.

The more extended language course enables the pupil in his secondary work not only to get a slight acquaintance with a few of the masterpieces of the language, but he also begins to read it with increased delight and more as a pleasure and means of culture than as a task assigned by his teacher. It seems to me the classics have suffered largely at the hands of their friends, those who have studied them only one, two, or three years. They have had the hard drill work and none of the pleasures and advantages of reading

rapidly and easily a classic masterpiece; hence they look back upon their language work as unpleasant and unprofitable. By the introduction of high-school studies into the grammar grades the gulf now existing between elementary and secondary education will be partially filled up. While some pupils who elect Latin may be kept from entering the high school, those who do enter will be better prepared to finish the ninth grade. Under the old system of having only the common branches below the high school, the bright, active, alert pupils were not given work which would test their powers of application and acquisition. Their ability, aided by tact and ingenuity, enabled them to satisfy the demands of the teacher very easily. In this way careless, indolent methods of doing school work were acquired which it was difficult to overcome in the ninth grade.

This plan of introducing secondary studies below the high school has also other minor advantages. But the gain of more than a half-year's time, the increased interest in linguistic studies, the enrichment of the grammar grades, the development of more studious habits and increased ability to master the ninth-grade work are sufficient advantages to recommend the plan. In this way only is it possible for the smaller schools to do collegiate work without developing popular disapproval or injuring the school system.

The discussion of these papers was opened by Professor M. L. D'Ooge, of the University of Michigan, who, after summing up the points made by Principal Peirce and Superintendent Tressler, said:

The question before us involves two other questions of prime importance: First, how far can the high school be a preparatory school to college without impairing its character and aim as a school for the people?

No one would claim that the high school should sacrifice its original purpose to the work of simply fitting for college the comparatively small number of pupils who continue their studies after graduation. But there is a pretty general consensus of opinion that to a large degree these functions of the high school are not at variance with each other.

Mr. Tressler has shown that in the sixth and seventh grades a better adjustment of studies is possible, and time may be gained for anticipating the work that is now done in the first year of the high school. In this way the high-school curriculum may be enlarged, and room may be found for doing more work not required for admission to college.

The second question that is involved in this discussion is this: May we hope that in the near future the college may relegate to the high school the work of the freshman year?

Mr. Peirce has shown that this is possible, at least for the stronger and better equipped high schools, some of which are doing this work already. Thus the way is paved for reducing the undergraduate course in college

to three years. From the point of view of professional training this is an important matter. Our professional schools are extending their curricula and raising their standards of admission and graduation. How to meet these demands, and at the same time not discourage young men from entering upon a preliminary course of liberal education is an important inquiry.

The University has organized combined courses in medicine and law by which a student may take his bachelor's degree with a four years' course in medicine, or a three years' course in law in six years.

The whole trend of higher education is in the direction of correlating secondary and collegiate and professional studies in such a way as to make a compact system that shall invite, if not compel, all who desire to become well equipped for a professional career to avail themselves of all the opportunities of undergraduate and postgraduate courses of study.

Principal E. C. Warriner, of Saginaw, East Side, spoke as follows:

I suppose I have been asked to speak on this subject because our school has had some little experience in doing graduate work. For the past three years we have offered courses corresponding to freshman work at the University of Michigan in Latin (Cicero, Livy and the comedians), in trigonometry and algebra, in paragraph writing, and in English history. Besides these courses, many of our graduates fill out other courses than that in which they received a diploma with Greek or German. We have sent to Ann Arbor eight or ten students who have received sufficient credit for work done in our high school to enable them to complete their college course in three years. This has, of course, been highly satisfactory to these students, as they are able to live much more cheaply at home than at college, and, as far as I am informed, the work done in our graduate courses has been satisfactory to the University authorities.

I believe that the policy of our high schools should be to offer collegiate courses in at least the first year's work, for three main reasons. First, the high school can do this work as well as the college. It is a matter of frequent comment that there is little difference between the character of last-year pupils in the high school and that of freshmen in college, and the students themselves are often disappointed that their freshman work is not more different from their high-school courses. As at present carried on, the early part of a college course is for the most part given over to drill work which could be done by competent teachers in the high school, and thus also afford a modicum of college training to many who will be denied the privilege of a complete college course. Secondly, the opportunity to give advanced instruction in the classics, in mathematics, and in English will make positions as teachers in our high schools more desirable, and more inviting as careers, even as professorships in German gymnasia. The work of high-school teaching is today too narrow, limited to too few possibilities to be attractive to the

highest minds, so that we are restricted in our choice of teachers to less able persons. Thirdly, allowing students to complete one year of a college course in the high school postpones one year their leaving home, keeps them one year longer from the alluring temptations of life in a college town. This phase of the subject does not often receive the attention it demands, but the complete freedom now given to boys at college is likely to prove too great for building the best characters. Another year in the home and the home environment may mean very much to a young man.

The meeting adjourned Saturday afternoon at 4 P.M.

E. C. WARRINER, Secretary.

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